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NPIC/D-62-6

6 APR 1964

MEMORANDUM FOR: Assistant Deputy Director (Intelligence) for Management

SUBJECT: Research and Development Project Approval Request for Multi-Sensor Imagery Research, Phase I

REFERENCE: DICI Memo DA G-3-00121, dated 23 December 1963: Approval of Research and Development Activities

In compliance with paragraph 5.b. of the reference, it is requested that the Project for Multi-Sensor Research, Phase I outlined in Annex 'A' be approved

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Director
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Attachment:
Annex A

APPROVED:

121 PAB
Assistant Deputy Director (Intelligence) for Management

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ANNEX AResearch and Development
Project Approval RequestI. Identification

This project is included in the NPIC financial plan under Special Techniques and Development Studies of the Technical Development Program for fiscal year 1964. It was programmed at [] level on the Class 700 Detail Sheet. Its internal designation is: Multi-Sensor Imagery Research, Phase I.

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II. Objectives

The proposed project is required in anticipation of future reconnaissance (of certain types of military situations) during hours of darkness. This project is to determine the most effective techniques of interpreting sequential day and [] (from a combination of camera and [] to determine changes in target activity. More specifically, the proposed project would seek to simulate "around-the-clock" acquisition and analysis of changing activity levels of certain targets which are indicators of military "build-up". It should be emphasized, however, that this project is not directed toward collection methods, but to the problem of imagery analysis and exploitation techniques.

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[] sensors have been flown over numerous targets to determine sensor effectiveness in general-purpose detection and identification. These studies have shown that, [] scanners are capable of acquiring imagery which has sufficient resolution to identify most targets of military interest. None of the projects, however, have demonstrated that [] imagery can be effectively related to photography obtained a few hours earlier. However, it now appears that this could be one of the more obvious uses of [] scanners in the near future: for, correct analysis of daylight photography [] imagery over the same targets would be an ideal method of continual, around-the-clock surveillance of an area of suspected military "build-up". Yet, to date, there is little objective knowledge

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about the quantity or reliability of data which can be interpreted from [] imagery under these circumstances. Furthermore, there is little knowledge about the additive intelligence value of the thermal "history" of a suspect target over a period of a week or so. It is suspected that activity-level interpretation can be improved considerably by this additive thermal information.

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IV. Technical Specifications

This project is planned in two phases. This project approval request is concerned only with Phase I, acquisition of the data. (Phase II, data analysis, will be performed by a separate contractor. Project approval request for Phase II will be submitted as soon as the contractor is selected and the cost is finalized).

Data acquisition will consist of flying aerial photography during the day, and [] over the same targets for seven days and seven nights. Collateral with the airborne operations will be collection of complete "ground truth" by people at each target site during the periods of overflight. (Detailed specifications for these three types of data have been compiled but due to their length and complexity they are not included here).

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The targets selected for this project are those considered as representative of build-up indicators. These targets are of the type which are closely scrutinized for levels of logistical activity in an area which is suspected of being built-up, militarily. The selected targets are: a port and its associated facilities; a large railroad yard; a large airport; a storage depot; a trucking terminal; a military motor pool; an installation or facility under rapid construction.

The selected project site is San Diego, California, not only since it has all of the required target types but it also has the best flying weather, night and day, of any of the cities considered.

V. Contractor and Financial Arrangements

The contractor for Phase I, data acquisition, would [] This firm was selected for several reasons: (1) they have the best [] on the market; (2) this scanner is already installed in an aircraft;

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(3) this company has the best capability for collection of ground truth data.

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VI. Coordination

This project has been coordinated with DD/S&T and the objectives were presented to DOD agencies at the Joint Procurement Meeting held in February.

VII. Security

The project is classified Secret and Agency interest is Secret. Contractor supervisory personnel for this project have been cleared by the Agency.

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